

*Equula edentula*, *Cybium semifasciatum*, *Chirocentrus dorab*, *Triacanthus biaculeatus*, *Tetrodon reticularis* and *laevigatus*, *Trygon Uarnak* and *Sephen*, *Taniura Mortoni*. Eleven may be classed as salt-water fishes occasionally ascending rivers into fresh water:—*Lates Darwiniensis*, *Pseudolates cavifrons*, *Polynemus tetradactylus*, *Corvina argentea*, *Platycephalus Mortoni*, *Periophthalmus australis*, *Mugil Waigiensis*, *Engraulis Hamiltoni*, *Clupea Sundaica*, *Elops saurus*, *Chanos salmoneus*. The freshwater fishes occasionally visiting the sea, are seven in number:—*Mugil dobula* and *Ramsayi*, *Chatoëssus Erebi*, and *elongatus*, *Megalops cyprinoides*, *Anguilla Reinhardtii* and *marginipinnis*. The entirely fresh water fishes are fifteen in number:—*Apogonichtys Gillii*, *Oligorus macquariensis*, *Therapon truttaceus*, *percoides*, *longulus*, *fuliginosus* and *parviceps*, *Centropogon robustus*, *Eleotris planiceps*, *Atherinichthys maculatus*, *Neosilurus Hyrtl*, *Copidoglanis tandanus*, *Arius Australis*, *Belone Krefftii*, *Ceratodus Forsteri*.

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NOTES ON THE METHOD OF OBTAINING WATER FROM EUCALYPTUS  
ROOTS AS PRACTICED BY THE NATIVES OF THE COUNTRY,  
BETWEEN THE LACHLAN AND DARLING RIVERS.

BY K. H. BENNETT, ESQ.

The country situated between the Lachlan and Darling Rivers (in some places nearly 200 miles wide) was until recent years, before its occupation for pastoral purposes, even in ordinary seasons entirely destitute of water for several months in each year, and the natives who formerly claimed and roamed over the country for a distance of forty or fifty miles from the above named rivers, were compelled during the hot dry months to resort to their banks, and remain there until the uncertain rainfall of this region had replenished the shallow swamps and waterholes; but with the scattered tribes or rather families who inhabited the still more arid intermediate portion, and between whom and the river natives a bitter feud existed, the case was different; here

they had no river to fall back upon, and except in the rare intervals of peace, such was their dread of their more powerful and fortunate neighbours that they would not venture near where they knew a never failing supply of the much prized element was easily obtainable, and consequently as may be imagined by those unacquainted with the resources of the country would soon become the victims of that horrible fate, Death from thirst! Such, however, was not the case, for Nature as if to make amends for the scarcity of water above ground has in this inhospitable region provided a perennial supply in the roots of several species of trees, which for the most part are unknown on the country nearer the rivers. On these roots—the natives in former times as a rule—used to depend for their supply of water for four or five months of every year (and in times of drought for the whole of the year). All this, however, refers to a bygone time, the whole or nearly all of this country has of late years been occupied for pastoral purposes. Wells and tanks have been sunk, and permanent water by these means secured, the river blacks have been almost “civilized” off the face of the earth; the old feud has died out, and the remnant of the back country natives have abandoned—except when traversing a strip of unoccupied country—their time honoured and somewhat laborious method of obtaining water from roots. There are several kinds of trees from which water was obtained, including three species of Eucalyptus, a species of Hakea and Currajong. The Eucalypti consist of a gum (the largest of the back country trees), a box, and mallee. The first named was the most preferred, as yielding the greatest quantity, and as the method was the same in all cases—this one will serve for a description of the *modus operandi*. This tree which somewhat resembles the red gum in appearance—the leaves being narrower and of a silvery colour—grows chiefly on sandy or light loamy soil, and throws out numerous lateral roots at a depth of from six to twelve inches from the surface of the ground. The native having ascertained the position of one or more of these roots by repeatedly jobbing the point of a spear or sharpened stick into the soft earth, and at a distance of some six or eight feet from

the trunk of the tree, quickly removes the superincumbent soil with his wooden shovel for twenty or thirty feet, and cutting the root off at each end lifts it out of the trench and cuts it up into lengths of about eighteen inches or two feet, knocks off the bark and stands the severed portions on end in some receptacle to contain the water, (in former times a water-bag made of the entire skin of a male wallaby.) As soon as these pieces are placed on end the water commences to drip, and, when the whole of the root or roots are cut up and placed on end, the native beginning at the first placed, puts the end in his mouth and by a vigorous puff expels the remaining water. The roots chosen are—with the bark on—about the size of a man's wrist, the larger ones being more woody and less porous contain little or no water. The water is beautifully clear, cool, and free from any unpleasant taste or smell.

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NOTE ON A VIVIPAROUS LIZARD (*Hinulia elegans*.)

By J. J. FLETCHER, M.A., B.Sc.

In vol. ii., p. 167, of the late lamented Prof. Balfour's Comparative Embryology, it is said that "a few forms (of *Reptilia*) are viviparous, viz., some of the blind-worms amongst lizards (*Anguis*, *Seps*), and some of the Viperidæ and Hydrophidæ amongst the serpents. In the majority of cases, however, the eggs are laid in moist earth, sand, &c."

In Prof. Owen's Anatomy of Verteb., vol. i., p. 616, it is stated that "the common ringed snake excludes the eggs, sixteen to twenty in number, connected together with a glutinous coating, usually in some fermenting mass of decaying organic matter, whereby they are often transported and spread abroad in the manuring of fields and gardens. The viper is not subject to this ovipositing cause of dispersion, and the confinement to a limited locality would seem to be the condition of the viviparity of most or all poisonous snakes. It affects however, the harmless slow-worm (*Anguis fragilis*), and nimble lizard (*Zootoca vivipara*), both of which usually produce their young alive."